STREAM CROSSING DESCRIPTIONS, CONDITION, AND FISH PASSAGE ASSESSMENT FOR THE OAK CREEK WATERSHED

APPENDIX X

Table X.1
Structure Description, Location, Condition, and Fish Passage Rating Assessment for Oak Creek and its Principal Tributaries: 2016-2017

ID Number on Map 4.14	Crossing Name	Structure Description	River Mile	Culvert/ Bridge Length (feet)	Limiting Water Depth (feet)	Embedded Depth (feet)	General Condition	Description of Problem	Fish Passage Rating	Recommended Actions
Grant Park Ravine										
1	First Oak Creek Parkway Crossing	Concrete bridge with abutments	0.35	54.0	1.8	--	Fair, floodwalls eroding	None	Passable	None
2	Second Oak Creek Parkway Crossing	Concrete bottom arch bridge	0.88	44.0	2.0	0-2.2	Fair	None	Passable	None
3	Mill Road	Concrete open bottom arch bridge	0.94	44.2	0.3	--	Fair	None	Passable	None
Lower Oak Creek – Mill Pond										
4	Mill Pond Dam	Masonry over concrete structure; 14-foot head	0.95	--	--	--	Fair	14-foot head is a complete fish passage impediment to all fish species; Masonry is deteriorating but the dam is structurally sound.	Impediment to Fish Passage	Explore dam removal options or installation of fish passage structure
5	Third Oak Creek Parkway Crossing	Concrete span bridge with abutments and side slopes	1.18	45.0	0-0.2	--	Good	Significant sediment fill in span #1	Passable	None
6	Fourth Oak Creek Parkway Crossing	Concrete bridge with abutments and side slopes	1.32	45.0	2.1	--	Good	None	Passable	None
7	Chicago Avenue (STH 32)	Concrete bridge with abutments	1.61	71.0	0.3	--	Good	None	Passable	None
8	Fifth Oak Creek Parkway Crossing	Concrete bridge with abutments and side slopes	2.14	44.0	0.6	--	Good	None	Passable	None
9	Walking Bridge	Wooden span bridge	2.24					None	Passable	None
10	Union Pacific Railway	Steel and concrete open bottom arch bridge	2.35	44.4	0.8	--	Poor, concrete cracking and eroding	None	Passable	None
11	15th Avenue	Concrete bridge with abutments and side slopes	2.84	60.0	0.5	--	Good	None	Passable	None
Lower Oak Creek										
12	Walking Bridge	Concrete and steel span bridge	3.19	--	--	--	Good	None	Passable	None
15	Rawson Avenue and 16th Avenue	Three cell concrete box culvert, each cell 9.8-feet-wide, 10-feet-high	3.65	230.0 (cell #1), 256.0 (cell #2), 278.5 (cell #3)	0-0.8	1-2.1	Good	Triple cell culvert creates limiting water depths that may be too shallow for passage of some species; Extreme culvert length with no resting areas makes traversing culvert difficult for some species	Potential Impediment to Fish Passage	Retrofit culvert to direct flow into two culverts until additional capacity is needed in high flow events; Install strategically placed cobble and boulder substrates within culvert to provide resting areas; Explore installation of grade control downstream of culvert to increase water depths within culvert

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Table X.1 (Continued)

ID Number on Map 4.14	Crossing Name	Structure Description	River Mile	Culvert/ Bridge Length (feet)	Limiting Water Depth (feet)	Embedded Depth (feet)	General Condition	Description of Problem	Fish Passage Rating	Recommended Actions
Lower Oak Creek (continued)										
16	15th Avenue	Concrete bridge with abutments	3.76	66.0	1.9	--	Fair, concrete cracking	None	Passable	None
17	Walking Bridge	Concrete span bridge	3.89	--	--	--	Fair	None	Passable	None
18	Milwaukee Avenue	Concrete bridge with abutments	4.01	67.0	1.1	--	Fair, concrete cracking	None	Passable	None
19	15th Avenue	Concrete bridge with abutments	4.06	70.0	0.7	--	Fair, concrete cracking	None	Passable	None
20	Walking Bridge	Concrete span bridge	4.18	--	--	--	Fair	None	Passable	None
21	Pennsylvania Avenue	Two cell concrete box culvert, each cell is 11.4-feet-wide, 10.5-feet-high	4.71	137.2	0.6-1.6	0-1.7	Good	None	Passable	None
22	Oak Leaf Trail	Steel and wood bridge with abutments and side slopes	5.14	10.6	0.3	--	Fair, rusting	None	Passable	None
Middle Oak Creek										
23	Union Pacific Railroad	Three span concrete bridge with abutments and side slopes	5.25	26.5	0-0.4	--	Fair	None	Passable	None
24	Drexel Avenue	Three cell concrete box culvert, each cell is 11.1-feet-wide, 16.5-feet-high	5.56	90.0	0.1-2.1	4.1-7.2	Good	Large debris accumulations have been observed at this location in the past, but have been removed	Passable	Monitor for debris accumulation
25	Walking Bridge-Adendschein Park	Steel and wood bridge with abutments and side slopes	5.63	11.5	1.5	--	Good	None	Passable	None
26	Walking Bridge-Adendschein Park	Steel and wood bridge with abutments and side slopes	5.72	11.3	2.4	--	Fair, rusted	None	Passable	None
27	Union Pacific Railroad (structure has been replaced since survey)	Concrete and steel bridge with abutments	6.06	24.7	0.3	--	Fair, concrete cracking	None	Passable	None
28	Forest Hill Avenue	Concrete bridge with abutments	6.25	33.0	1.8	--	Good	None	Passable	Monitor for debris accumulation
29	Puetz Road	Concrete bridge with abutments and side slopes	6.83	43.0	1.0	--	Fair, bridge deck cracking	Significant sediment deposition and beaver dam found just upstream of the bridge	Passable	Monitor for beaver activity and remove debris accumulation as needed
30	Union Pacific Railroad	Concrete and steel bridge with abutments	7.34	29.0[a]	1.8	--	Poor, concrete cracking and eroding	None	Passable	None
31	Nicholson Road	Concrete bridge with abutments and side slopes	7.44	47.5	0.3	--	Good	Structure itself is passable, however placement of rock across channel downstream of bridge may obstruct passage of some fish species	Potential Impediment -Fish Passage	Rearrange excess rubble-allow for better passage lanes

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Table X.1 (Continued)

ID Number on Map 4.14	Crossing Name	Structure Description	River Mile	Culvert/ Bridge Length (feet)	Limiting Water Depth (feet)	Embedded Depth (feet)	General Condition	Description of Problem	Fish Passage Rating	Recommended Actions
Middle Oak Creek (continued)										
32	Shepherd Avenue	Two cell concrete box culvert, each cell is 12.6-feet-wide, 10.9-feet-high	8.41	108.0	0.3	0-0.5	Good	Beaver activity and accumulation of large woody debris at the culvert inlet have been observed in the past but has been removed	Passable	Monitor for debris accumulation
33	Howell Avenue (northbound)	Three span concrete bridge with abutments and side slopes	9.22	57.2	0.2	--	Good	Channel is over-widened through crossing causing insufficient water depths during fair-weather flow conditions; Debris has accumulated in the channel downstream of the crossing	Potential Impediment to Fish Passage	Retrofit channel with vein structures-direct flow to a "low-flow channel" to promote sufficient water depths during fair weather flow conditions while allowing overflow onto second "tier" when higher flows occur; Main channel should have widths similar to those upstream of crossing
34	Howell Avenue (southbound)	Concrete bridge with abutments and side slopes	9.24	57.2	0-0.2	--	Fair	Channel is over-widened through crossing causing insufficient water depths during base-flow conditions	Potential Impediment to Fish Passage	See above
Upper Oak Creek										
35	Ryan Road/STH 100 (downstream crossing)	Three cell concrete box culvert; each cell is 11-feet-wide, 8-feet-high	10.06	223.0	--	2.9-6.0	Good	Culvert cells have excessive sediment build-up; Sediment accumulation is likely related-backwater effect from modification and relocation of the confluence of North Branch Oak Creek with the mainstem	Passable	Monitor sediment accumulation within and near culvert; Reinforce sediment accumulation at upstream end of culverts-continue-direct fair weather flow into one cell; Explore a solution-more extensive problems caused by channel modifications in this immediate reach
36	Canadian Pacific Railroad	Two cell concrete box culvert; each cell is 11-feet-wide, 8-feet-high	10.24	112.0	0.3	1.2-3+	Good	Sediment accumulation within right cell (looking upstream) may become problem if continued	Passable	Install strategically placed cobble and boulder substrates within left cell of culvert along both walls-provide resting areas for passing fish
37	Canadian Pacific Railroad (old culvert on secondary channel)	One 12-foot-wide, 7-foot-high concrete box culvert (0.6-foot rise in the middle section) on top of one 4-foot-wide, 2.5-foot-high concrete box culverts (severely failing)	10.24	68.0	0	0	Poor, concrete failing	Concrete is failing and potentially compromising integrity of rail crossing; Structure is likely unnecessary considering the capacity of the double cell culvert discussed above (Structure 36)	Impediment to Fish Passage	Work with Canadian Pacific Railroad-consider options for removal and/or replacement

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Table X.1 (Continued)

ID Number on Map 4.14	Crossing Name	Structure Description	River Mile	Culvert/ Bridge Length (feet)	Limiting Water Depth (feet)	Embedded Depth (feet)	General Condition	Description of Problem	Fish Passage Rating	Recommended Actions
Upper Oak Creek (continued)										
38	Private Farm Road	Primary 5-foot wide, 2.7-foot high corrugated metal pipe arch culvert conveys low-flow-Structure 36, secondary 4.7-foot wide, 3-foot high corrugated metal pipe arch culvert perched 3.5 feet at the inlet on the left bank of the stream that conveys high flow-Structure 37	10.25	50.0 (primary) 44.0 (secondary)	0.1 (primary) dry (secondary)	0	Poor	Concrete surrounding culvert is failing; Outlet is almost completely inundated by downstream ponding	Impediment to Fish Passage	Remove culverts replace with an appropriately sized culvert or bridge if crossing is still necessary
39	Private Farm Road (abandoned)	Abandoned wood and steel farm crossing; No longer usable	10.60	--	--	--	--	Structure has failed and is no longer in use; Rock placed across channel under bridge may obstruct passage of some fish species	Potential Impediment to Fish Passage	Remove structure and rearrange rock-allow for better passage lanes
40	13th Street (bridge has been replaced since survey)	Concrete bridge with abutments and side slopes	10.69	90.0	0.2	--	Good	Channel is over-widened through crossing causing insufficient water depths during base-flow conditions	Potential Impediment to Fish Passage	Retrofit a "low-flow channel" with narrower main channel-promote sufficient water depths during base-flow conditions while allowing overflow onto second "tier" when higher flows occur
41	IH 94 Northbound Off-Ramp	Three span concrete bridge with abutments and side slopes	10.96	30.0	0.2	--	Good	Significant cattail growth in the downstream channel	Passable	None
42	IH 94 Northbound Lanes	Three span concrete bridge with abutments and side slopes	10.97	80.0	0.2	--	Good	Lack of quality substrates	Passable	Add strategically placed large cobble or boulder for resting areas for passing fish
43	IH 94 Southbound Lanes	Three span concrete bridge with abutments and side slopes	10.99	77.0	0.2	--	Good	Lack of quality substrates	Passable	Add strategically place large cobble or boulder for resting areas for passing fish
44	IH 94 Southbound On-Ramp	Three span concrete bridge with abutments and side slopes	11.00	30.0	0.8	--	Good	Lack of quality substrates	Passable	Add strategically place large cobble or boulder for resting areas for passing fish
45	20th Street	One approximately 8-foot wide corrugated metal pipe arch culvert (height and embeddedness unknown due-excessive water depth)	11.23	140.0	4.8	unknown	Good	Upstream and downstream ponding and upstream debris above top of culvert indicate the culvert is undersized and is likely a fish passage impediment due-high velocities under high flow conditions	Potential Impediment to Fish Passage	Further investigation needed-determine suitability of culvert size

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Table X.1 (Continued)

ID Number on Map 4.14	Crossing Name	Structure Description	River Mile	Culvert/ Bridge Length (feet)	Limiting Water Depth (feet)	Embedded Depth (feet)	General Condition	Description of Problem	Fish Passage Rating	Recommended Actions
Upper Oak Creek (continued)										
46	27th Street (STH 241)	Two cell concrete box culvert, each cell 12-feet-wide, 7-feet-high	11.70	129.5	0.1	1.0-1.8	Good	Sediment accumulation particularly in right cell (looking upstream) could become excessive; Flow is currently diverted-left cell which is desirable-maintain sufficient water depths	Passable	Reinforce existing sediment bar at inlet of right cell (looking upstream)-continue-direct fair-weather flow-left cell-maintain sufficient water depths but allow flow into second cell when needed during high flows
47	31st Street	Two concrete ellipse culverts, each is 8.8-feet-wide, 5.6-feet-high	11.97	51.0	0.1-0.3	0.5-1.3	Fair, concrete cracking	One cell of the two-cell structure appears-be sufficient for majority of flow conditions; Sediment accumulations and shallow water depths may make passage difficult during extreme low-flow conditions	Potential Impediment to Fish Passage	Retrofit channel at culvert inlet-direct flow during fair-weather conditions-one cell and allow flow into second cell when needed during high flows
48	35th Street	Two cell concrete box culvert, each cell is 10-feet-wide, 5-feet-high	12.20	91.5	<0.1	0-1.5	Good	Cell on right side of structure (looking upstream) is blocked by sediment accumulation on upstream end; All flow enters left cell and there is significant cross-flow from left cell-right cell through the joints in the cell wall; Majority of flow exits the right cell at downstream end of structure; Rock placement downstream of the left cell also causes fish passage impediment	Impediment to Fish Passage	Joints of culvert wall should be sealed-prevent cross-flow, Investigate adding grade control downstream of culvert-provide stability for streambanks and the culvert; Add strategically placed cobble and boulder substrates within culvert cells along both walls-provide resting areas for passing fish; Re-arrange rock placement downstream of crossing
49	Ryan Road (upstream)	One 8-foot-wide, 7-foot-high concrete box culvert	12.52	186.0	0.2	0-0.9	Good	Water depths within structure may become insufficient for fish passage during low-flow periods	Passable	Investigate potential for addition of downstream grade control-improve water depths through culvert during low-flow periods; Add strategically placed cobble and boulder substrates culvert along both walls-provide resting areas for passing fish
Oak Creek Headwaters										
50	Concrete Drop Structure No. 1	One 3.5-foot-head concrete drop structure	12.66	--	--	--	Poor	Concrete drop structure completely blocks flow during fair-weather flow conditions except for that which flows through crack in structure; Concrete is cracked and failing in multiple locations	Impediment to Fish Passage	Drop structure was likely installed-control head-cutting; If structure is removed, grade control through naturalized channel morphology is necessary

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Table X.1 (Continued)

ID Number on Map 4.14	Crossing Name	Structure Description	River Mile	Culvert/ Bridge Length (feet)	Limiting Water Depth (feet)	Embedded Depth (feet)	General Condition	Description of Problem	Fish Passage Rating	Recommended Actions
Oak Creek Headwaters (continued)										
51	Southwood Drive	One 9-foot-wide, 6-foot-high concrete box culvert	12.82	60.0	0.1	0.2-0.7	Good	Sediment accumulation at one location within culvert constricts flow; Water depths within structure may become insufficient for fish passage during low-flow periods	Passable	Add strategically placed cobble and boulder substrates within culvert cells along both walls-provide resting areas for passing fish; Consider downstream grade control-provide greater water depths through culvert
52	Concrete Drop Structure No. 2	One 1.3-foot-head concrete drop structure	12.86	--	--	--	Fair	Concrete weir structure completely blocks flow during fair-weather flow conditions	Impediment to Fish Passage	Drop structure was likely installed-control head-cutting; If structure is removed, grade control through naturalized channel morphology is necessary
53	Concrete Drop Structure No. 3	One 1.3-foot head concrete drop structure	12.93	--	--	--	Fair	Concrete drop structure is perched about 18 inches above downstream water surface	Impediment to Fish Passage	Drop structure was likely installed-control head-cutting; If structure is removed, grade control through naturalized channel morphology is necessary
54	Concrete Drop Structure No. 4	Concrete drop structure buried in sediment	13.05	--	--	--	Poor	Concrete drop structure blocks most flow in fair-weather conditions; Much of the structure is buried by sediment	Impediment to Fish Passage	Drop structure was likely installed-control head-cutting; If structure is removed, grade control through naturalized channel morphology is necessary
55	Southland Drive	One 10-foot-wide, 6-foot-high concrete box culvert	13.16	43.2	0.2	0-0.4	Good	Culvert itself is passable but large accumulation of rock downstream of culvert is likely a fish passage obstruction for some species	Passable	Rearrange rock-allow for better passage lanes
56	Woodward Drive	One 10-foot-wide, 3.5-foot-high concrete box culvert	13.28	40.0	0	--	Fair	Stream has very little flow under normal conditions and becomes intermittent upstream of this crossing	Passable	None
57	Private Drive Enclosure	One 4-foot diameter corrugated metal pipe culvert	13.41	162.0	0.1	0-0.2	Fair, rusted	Ephemeral stream	--	Repair masonry on downstream end of culvert
58	Glenwood Drive	One 3.2-foot wide, 2-foot high concrete ellipse culvert	13.54	48.5	0.2	0.1	Fair	Ephemeral stream	--	None
59	Private Driveway	One 3-foot wide, 2-foot high corrugated metal pipe arch culvert	13.57	28.0	0.4	0-0.1	Good	Ephemeral stream	--	None
60	Private Driveway	One 3-foot wide, 2-foot high corrugated metal pipe arch culvert	13.58	26.0	0.3	0-0.1	Good	Ephemeral stream	--	None
61	Maplecrest Drive	One 2.5-foot wide, 1.6-foot high concrete ellipse culvert	13.61	48.0	0.5	0.1	Good	Ephemeral stream	--	None

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Table X.1 (Continued)

ID Number on Map 4.14	Crossing Name	Structure Description	River Mile	Culvert/ Bridge Length (feet)	Limiting Water Depth (feet)	Embedded Depth (feet)	General Condition	Description of Problem	Fish Passage Rating	Recommended Actions
Oak Creek Headwaters (continued)										
62	Enclosure Upstream of Maplecrest Drive	1.4-foot concrete circular culvert at inlet, 1.8-foot concrete circular culvert at outlet	13.64	260.0	0	0	Good	Ephemeral stream	--	None
63	Franklin Woods Nature Center Path	One 3-foot wide, 2-foot high concrete ellipse culvert	13.73	16.0	1.1	0-0.1	Fair	Ephemeral stream	--	None
64	Puetz Road (headwaters)	2.5-foot diameter concrete pipe culvert	13.77	48.5	0	0	Good	Ephemeral stream	--	None
Lower North Branch Oak Creek										
65	Canadian Pacific Railroad	Two cell concrete box culvert' each cell is 20-feet-wide, 6.5-feet-high	0.10	55.0	0.1	0	Poor, concrete cracking and crumbling	Downstream weir associated with culvert structure is perched about 4 feet above downstream water surface; Concrete at multiple locations on structure is cracking and crumbling; Head-cutting at downstream end of structure is occurring	Impediment to Fish Passage	Work with Canadian Pacific Railroad-formulate plan-replace with structure at stream grade or retrofit a fish passage alternative; Head-cutting should be addressed by downstream grade control through naturalized channel morphology
66	Puetz Road (culvert has been replaced since survey was completed)	Two cell concrete box culvert, each cell is 10-feet-wide, 8-feet-high	0.92	42.0	0.9	0-0.4	Poor, concrete eroded	Left wingwall (looking upstream) on downstream end of culvert has collapsed, wingwall on upstream end is failing	Passable	Culvert has been replaced since survey was completed; Conduct new fish passage assessment
67	Weatherly Drive	Concrete open bottom arch bridge	1.77	62.0	0.2	--	Good	Newly constructed bridge for the most part is a good model for designing a "fish friendly" crossing; Problem is related-excessive rock placed across the channel under the crossing that may create fish passage impediment	Passable	Rearrange rock placement-allow for better passage lanes
68	Wildwood Drive	Three span concrete bridge with abutments	2.00	51.5	0.3	--	Fair, concrete cracking	Sediment accumulation	Passable	Monitor sediment accumulation
69	Drexel Avenue	Three cell concrete box culvert, each cell is 10-feet-wide, 10-feet-high	2.17	123.0	--	2.8-4.1	Good	Beaver dams upstream and downstream of culvert may affect fish passage	Passable	Monitor beaver activity and remove dams if they begin-affect crossing
70	Canadian Pacific Railroad	Three cell concrete box culvert, each cell is 10-feet-wide, 10-feet-high	2.25	78.0	1.7	3.5-5.0	Good	None	Passable	None
71	S. 6th Street (downstream)	Concrete bridge with abutments	2.41	99.0	2.0	--	Fair/Poor, some failing concrete	None	Passable	General maintenance on deteriorating concrete

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Table X.1 (Continued)

ID Number on Map 4.14	Crossing Name	Structure Description	River Mile	Culvert/ Bridge Length (feet)	Limiting Water Depth (feet)	Embedded Depth (feet)	General Condition	Description of Problem	Fish Passage Rating	Recommended Actions
Upper North Branch Oak Creek										
72	Marquette Avenue	Concrete bridge with abutments	3.05	58.0	1.8	--	Good	Water levels may be insufficient for passage during low-flow conditions	Passable	Retrofit a "low-flow channel" with narrower main channel-promote sufficient water depths during average flow conditions while allowing overflow onto second "tier" when higher flows occur
73	Rawson Avenue	Two cell concrete box culvert, each cell is 11.2-feet-wide, 9.1-feet-high	3.51	173.0	0.3-0.7	2.4-4.0	Good	Sediment accumulation	Passable	Monitor for excess sediment accumulation
74	S. 6th Street (upstream)	Two cell concrete box culvert, each cell is 10-feet-wide, 9-feet-high	3.86	125.0 (cell #1), 116.0 (cell #2)	0.1-0.6	0-1.9	Good	Crossing itself is passable but upstream there is a long and steep rock cascade that is likely a fish passage impediment for most species	Passable	Investigate slope modifications for upstream rock cascade
75	Access Road-Electrical Station	Two span concrete bridge with abutments	4.04	33.0	0.2	--	Good	None	Passable	None
76	MATC Drive	Two cell corrugated metal pipe culvert, each cell is 5-feet	4.32	89.5	--	0-0.3	Poor, culvert bottom failing due-rust	Major debris blockage on upstream side of culvert was fish passage impediment at time of survey	Impediment to Fish Passage	Remove debris jam
77	MATC Walking Bridge	Wood span bridge with concrete side walls	4.34	--	--	--	Fair	None	Passable	None
78	MATC Walking Bridge	Steel span bridge	4.51	--	--	--	Fair	None	Passable	None
79	Abandoned Private Crossing	One 10-foot wide, 9-foot high smooth metal pipe arch culvert	4.58	18.0	--	0.2	Poor, crushed and failing culvert, unsafe structure	Steel structure is collapsing and collecting debris which is causing a fish passage impediment; Structure is also a safety hazard and could collapse	Impediment to Fish Passage	Remove structure and naturalize streambanks-prevent erosion
80	Abandoned Private Crossing	One 10-foot wide, 8-foot high smooth metal pipe arch culvert	4.60	18.0	0.7	2.0	Poor, rusted and failing	Steel bridge is deteriorated and doesn't seem-be used	Passable	Remove structure and naturalize streambanks-prevent erosion
81	Abandoned Private Crossing	One 9.5-foot wide, 7.2 foot high smooth metal pipe arch culvert	4.65	18.7	0.15	2.0	Poor, bridge failing	Steel bridge is deteriorated and doesn't seem-be used	Passable	Remove structure and naturalize streambanks-prevent erosion
82	Abandoned Private Crossing	One 12-foot wide, 8-foot high smooth metal pipe arch culvert	4.72	16.0	0.2	3.5	Poor, rusted	Steel bridge is deteriorated and doesn't seem-be used	Passable	Remove structure and naturalize streambanks-prevent erosion
83	Canadian Pacific Railroad	One 5.6-foot wide open bottom arch culvert with corrugated metal top and stone face	4.74	96.0	--	--	Fair, rusting	Condition of interior of culvert is unknown	Passable	None

Table continued on next page.

Table X.1 (Continued)

ID Number on Map 4.14	Crossing Name	Structure Description	River Mile	Culvert/ Bridge Length (feet)	Limiting Water Depth (feet)	Embedded Depth (feet)	General Condition	Description of Problem	Fish Passage Rating	Recommended Actions
Upper North Branch Oak Creek (continued)										
84	College Avenue	Two cell concrete box culvert, each cell is 12-feet-wide, 7-feet-high	4.92	317.0	--	0.6-3.2	Good	Heavy sediment accumulation upstream; Water level is only 1.5 feet below top of culvert; Condition of interior of culvert is unknown	Passable	Monitor sediment accumulations and capacity of structure-pass flows
85	13th Street	Three cell corrugated metal pipe arch culvert, each cell is 5.5-foot wide	5.21	123.0	--	0.1-1.0	Fair, culvert rusting and concrete cracking	Condition of interior of culvert is unknown	Passable	Consider span bridge when time for replacement
86	IH 94 Enclosure	One 12-foot-wide, 9-foot-high concrete box culvert (inlet), two cell concrete box culvert, each cell is 9-feet-wide, 5-feet-high (outlet)	5.65	515.0	--	1.0-2.5	Good/Fair	Likely not passable for most fish species due-excessive length and excessive velocities during higher flows	Potential Impediment to Fish Passage	None
87	IH 94 Airport Spur (downstream)	One 12-foot-wide, 8-foot-high concrete box culvert	5.85	343.0	0.9	0.6-2.9	Good	Likely not passable for most fish species due-excessive length and excessive velocities during higher flows	Potential Impediment to Fish Passage	None
88	IH 94 Airport Spur (upstream)	One 12-foot-wide, 8-foot-high concrete box culvert	6.00	190.0	0.1	1.7-3.0	Fair, concrete cracking along wingwall	None	Passable	None
89	20th Street	Two 7.2-foot wide, 5.5-foot high corrugated metal pipe arch culvert (inlet, approximately 13 feet long), Two 8.5-foot wide, 6.1-foot high corrugated metal pipe arch culvert (outlet)	6.09	136.0	--	--	Good	Debris accumulation within pipe culverts at upstream end	Impediment to Fish Passage	Clear debris blockages
Lower Mitchell Field Drainage Ditch										
90	Chicago and Northwestern Railroad	Three span concrete bridge with abutments and side slopes	0.14	27.5	0.3	--	Fair	None	Passable	None
91	Rawson Avenue	One 12-foot-wide, 6-foot-high concrete box culvert	0.80	177.0	--	--	Good	Beaver dams were observed upstream and downstream of this culvert but have been removed	Passable	Monitor for beaver activity that may cause blockage
92	College Avenue	Three cell concrete box culvert, each cell is 8-feet-wide, 6-feet-high	1.83	136.0	0-0.6	0-1.2	Good	Minor debris and sediment accumulation at upstream end of culvert	Passable	Remove debris and monitor sediment accumulation

Notes: The red indicates high priority and yellow color indicates moderate priority ratings-address fish passage issues in the watershed.
This table is not a complete inventory of stream crossings. Only structures that field crews were able-access are included.
Where sufficient hydraulic capacity allows, roughness in the form of appropriately sized cobble and boulder should be added-the interior of culverts, particularly along culvert walls.

[a] *Length of abutment, no bridge deck, just rails.*

Source: SEWRPC

Figure X.1
Stream Crossings Along Surveyed Reaches of Oak Creek, North Branch Oak Creek and Mitchell Field Drainage Ditch: 2016

GRANT PARK RAVINE

First Oak Creek Parkway Crossing – RM 0.35

Second Oak Creek Parkway Crossing – RM 0.88

Mill Road – RM 0.94

LOWER OAK CREEK – MILL POND

Mill Pond Dam – RM 0.95

Third Oak Creek Parkway Crossing – RM 1.18

Figure X.1 (Continued)

LOWER OAK CREEK – MILL POND (continued)

Fourth Oak Creek Parkway Crossing – RM 1.32

Chicago Avenue (STH 32) – RM 0.35

Fifth Oak Creek Parkway Crossing – RM 2.14

Walking Bridge

Union Pacific Railway – RM 2.35

15th Avenue – RM 2.84

LOWER OAK CREEK

Walking Bridge – RM 3.19

Rawson Avenue and 16th Avenue – RM 3.65

Figure X.1 (Continued)

LOWER OAK CREEK (continued)

15th Avenue – RM 3.76

Walking Bridge – RM 3.89

Milwaukee Avenue – RM 4.01

15th Avenue – RM 4.06

Walking Bridge – RM 4.18

Pennsylvania Avenue – RM 4.71

Oak Leaf Trail – RM 5.14

Figure X.1 (Continued)

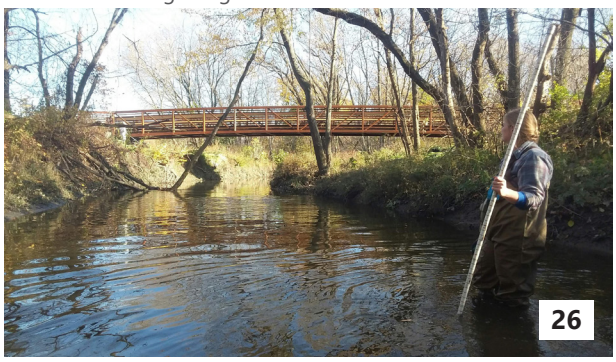
MIDDLE OAK CREEK

Union Pacific Railroad – RM 5.25

Drexel Avenue – RM 5.56

Walking Bridge-Adendschein Park – RM 5.63

Walking Bridge-Adendschein Park – RM 5.72



Union Pacific Railroad[a] – RM 6.06

Forest Hill Avenue – RM 6.25

Puetz Road – RM 6.83

Union Pacific Railroad – RM 7.34

Figure X.1 (Continued)

MIDDLE OAK CREEK (continued)

Nicholson Road – RM 7.44

Shepherd Avenue – RM 8.41

Howell Avenue (northbound) – RM 9.22

Howell Avenue (southbound) – RM 9.24

UPPER OAK CREEK

Ryan Road/STH 100 (downstream crossing) – RM 10.06

Canadian Pacific Railroad – RM 10.24

Canadian Pacific Railroad
(old culvert on secondary channel) – RM 10.24

Private Farm Road – RM 10.25

Figure X.1 (Continued)

UPPER OAK CREEK (continued)

Private Farm Road (abandoned) – RM 10.60

13th Street[a] – RM 10.69

IH 94 Northbound Off-Ramp – RM 10.96

IH 94 Northbound Lanes – RM 10.97

IH 94 Southbound Lanes – RM 10.99

IH 94 Southbound On-Ramp – RM 11.00

20th Street – RM 11.23

27th Street (STH 241) – RM 11.70

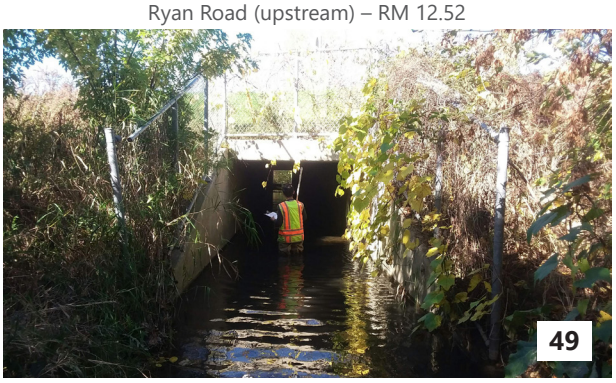
Figure X.1 (Continued)

UPPER OAK CREEK (continued)

31st Street – RM 11.97

35th Street – RM 12.20

Ryan Road (upstream) – RM 12.52



OAK CREEK HEADWATERS

Concrete Drop Structure No. 1 – RM 12.66

Southwood Drive – RM 12.82

Concrete Drop Structure No. 2 – RM 12.86

Concrete Drop Structure No. 3 – RM 12.93

Figure X.1 (Continued)

OAK CREEK HEADWATERS (continued)

Concrete Drop Structure No. 4 – RM 13.05

Southland Drive – RM 13.16

Woodward Drive – RM 13.28

Private Drive Enclosure – RM 13.41

Glenwood Drive – RM 13.54

Private Driveway – RM 13.57

Private Driveway – RM 13.58

Maplecrest Drive – RM 13.61

Figure X.1 (Continued)

OAK CREEK HEADWATERS (continued)

Enclosure Upstream of Maplecrest Drive – RM 13.64

Franklin Woods Nature Center Path – RM 13.73

Puetz Road (headwaters) – RM 13.77

LOWER NORTH BRANCH OAK CREEK

Canadian Pacific Railroad – RM 0.10

Puetz Road[a] – RM 0.92

Weatherly Drive – RM 1.77

Wildwood Drive – RM 2.00

Figure X.1 (Continued)

LOWER NORTH BRANCH OAK CREEK (continued)

Drexel Avenue – RM 2.17

Canadian Pacific Railroad – RM 2.25

S. 6th Street (downstream) – RM 2.41

UPPER NORTH BRANCH OAK CREEK

Marquette Avenue – RM 3.05

Rawson Avenue – RM 3.51

S. 6th Street (upstream) – RM 3.86

Access Road to Electrical Station – RM 4.04

Figure X.1 (Continued)

UPPER NORTH BRANCH OAK CREEK (continued)

MATC Drive – RM 4.32

MATC Walking Bridge – RM 4.34

MATC Walking Bridge – RM 4.51

Abandoned Private Crossing – RM 4.58

Abandoned Private Crossing – RM 4.60

Figure X.1 (Continued)

UPPER NORTH BRANCH OAK CREEK (continued)

Abandoned Private Crossing – RM 4.65

Abandoned Private Crossing – RM 4.72

Canadian Pacific Railroad – RM 4.74

College Avenue – RM 4.92

13th Street – RM 5.21

IH 94 Enclosure – RM 5.65

IH94 Airport Spur (downstream) – RM 5.85

Figure X.1 (Continued)

UPPER NORTH BRANCH OAK CREEK (continued)

IH94 Airport Spur (upstream) – RM 6.00

20th Street – RM 6.09

LOWER MITCHELL FIELD DRAINAGE DITCH

Chicago and Northwestern Railroad – RM 0.14

Rawson Avenue – RM 0.80

College Avenue – RM 1.83

[a] *Structure has been replaced since survey.*

Source: SEWRPC